

WHAT IS CLAIMED IS:

1 1. A tape for shielding insulated electrical wire to provide a positive attenuation of
2 and protection from electromagnetic and radio frequency interference, said tape comprising:
3 an outer insulation layer formed of PTFE; and
4 an inner conductive layer formed of metallic powder dispersed in PTFE.

1 2. The tape of Claim 1 wherein said inner conductive layer comprises substantially
2 equal parts of metallic powder and PTFE.

1 3. The tape of Claim 1 wherein said metallic powder is selected from the group
2 consisting of copper, iron, nickel, aluminum, silver, gold and carbon, alone or in combination.

1 4. The tape of Claim 1 wherein it is constructed so that it can be spirally wound
2 and cured on the insulated electrical wire.

1 5. A method of manufacturing the tape of Claim 1 wherein said outer insulation
2 layer is coated with said inner conductive layer, and said inner conductive layer is cured
3 thereon.

1 6. The method of Claim 5 wherein said inner conductive layer is heat-cured on
2 said outer insulation layer.

1 7. The tape of Claim 1 wherein an outer conductive layer is disposed on the outer
2 surface of said insulation layer and is formed of metallic powder dispersed in a PTFE
3 dispersion or ink solution.

1 8. The tape of Claim 1 wherein an inner insulation layer formed of PTFE is
2 disposed on the inner surface of said inner conductive layer, said inner and outer insulation
3 layers being offset laterally to expose inner and outer lateral end portions of said inner
4 conductive layer.

1 9. The tape of Claim 8 wherein an adhesive with slipsheet layer is disposed on the
2 inner surface of said inner insulation layer.

1 10. The tape of Claim 1 wherein said inner conductive layer is formed of metallic
2 powder disposed in a PTFE dispersion or ink solution.

1 11. Shielded electrical wire, comprising:
2 insulated wire;
3 a conductive layer surrounding said insulated wire to provide a positive
4 attenuation of and protection from electromagnetic and radio frequency interference, said
5 conductive layer comprising metallic powder dispersed in PTFE; and
6 an insulation layer formed of PTFE surrounding said conductive layer;
7 said conductive layer and said insulation layer being formed by a tape having said layers that is
8 spirally wound around and cured on said insulated wire.

1 12. The shielded electrical wire of Claim 11 wherein said conductive layer
2 comprises substantially equal parts of metallic powder and PTFE.

1 13. The shielded electrical wire of Claim 12 wherein said conductive layer is
2 formed by dispersing said metallic powder in a PTFE solution, and heating and curing said
3 metallic powder-PTFE mixture on said insulation layer of said tape to form said conductive
4 layer thereon.

1 14. The shielded electrical wire construction of Claim 11 wherein said metallic
2 powder is selected from the group consisting of copper, iron, nickel, aluminum, silver, gold
3 and carbon, alone or in combination.

1 15. The shielded electrical wire of Claim 11 wherein said tape comprises a second
2 conductive layer surrounding said insulation layer.

1 16. The shielded electrical wire of Claim 11 wherein said tape comprises a second
2 insulation layer surrounding said conductive layer.

1 17. The shielded electrical wire of Claim 16 wherein said insulation layers are offset
2 laterally on opposite surfaces of said conductive layer to expose inner and outer lateral end
3 portions thereof.

1 18. A method of manufacturing an insulated electrical wire that is shielded from
2 electromagnetic and radio frequency interference, comprising;

3 spirally winding around the wire a tape having an outer insulation layer and an inner
4 conductive layer, and

5 heating and curing said tape on the wire to form a substantially continuous surface
6 thereon.

1 19. The method of Claim 18 wherein the wire is cleaned and preheated before the tape
2 is wound thereon.

1 20. The method of Claim 19 wherein the wire is preheated to a temperature of
2 approximately 650°F.

1 21. The method of Claim 18 wherein the tape wound around the wire is cured by
2 passing it through a heated metal compression sealer at a temperature of approximately 800°F.

1 22. The method of Claim 18 wherein said outer insulation layer is formed of PTFE and
2 said inner conductive layer is formed of metallic powder dispersed in PTFE.

1 23. The method of Claim 22 wherein said metallic powder is selected from the group
2 consisting of copper, iron, nickel, aluminum, silver, gold and carbon, alone or in combination.
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